



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,217	10/30/2001	Yen Lane Chen	57132US002	4996

7590 01/30/2003

Peter Olson, Esq.
3M Innovative Properties Company
3M Center, Bldg. 220
P.O. Box 33427
St. Paul, MN 55133-3427

EXAMINER

GEISEL, KARA E

ART UNIT	PAPER NUMBER
----------	--------------

2877

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,217

Applicant(s)

CHEN ET AL.

Examiner

Kara E Geisel

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 33 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 22-28 and 30-32 is/are rejected.
- 7) ☒ Claim(s) 21 and 29 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35U.S.C. 121:

- I. Claims 1-32, drawn to a method of detecting coverage or wear of a coating on a substrate, classified in class 356, subclass 300.
- II. Claims 33-34, drawn to an aqueous fluorescent compound, classified in class 252, subclass 301.35.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process of detecting coverage or wear of a coating on a substrate can be practiced with "any fluorescent compound that will absorb in the ultraviolet spectrum and emit in the visible spectrum" as disclosed in the specification on page 6, and therefore, the process can be practice with a different fluorescent compound than the one that is claimed. Furthermore, the product as claimed can be used in different process of using, such as applying to steps in a dwelling so that one can turn on a black light at night and safely move up and down the steps without having to adjust one's eyes to a bright light.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone communication with Kevin Rhodes on January 14th, 2003 a provisional election was made with traverse to prosecute the invention of group I, claims 1-32. Affirmation of this

Art Unit: 2877

election must be made by applicant in replying to this Office action. Claims 33-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

The information disclosure statement filed on January 25th, 2002 has been fully considered by the examiner.

Specification

The disclosure is objected to because of the following informalities: on page 7, line 7, the serial number of an incorporated reference is missing.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7-8, 14, 18, 20, 26 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanneman (USPN 4,327,155).

In regards to claims 1 and 26, Hanneman discloses a method of detecting wear on a substrate, comprising coating a composition comprising a fluorescent compound on the surface of the substrate

Art Unit: 2877

(column 2, lines 5-20), exposing the coated surface to wear (column 2, lines 7-11), exposing the coated surface to radiation capable of exciting the fluorescent compound (column 2, lines 17-18), and detecting the presence or absence of fluorescence (column 2, lines 12-20).

In regards to claim 2, a method of detecting wear on a substrate is discussed above. Furthermore, the radiation comprises ultraviolet light (column 3, lines 23-30).

In regards to claim 3, a method of detecting wear on a substrate is discussed above. Furthermore, the radiation has a wavelength from 200-400 nm (column 3, lines 23-30).

In regards to claim 7, a method of detecting wear on a substrate is discussed above. Furthermore, exposing the coated surface to radiation occurs after a predetermined period of time (column 2, lines 7-11).

In regards to claim 8, a method of detecting wear on a substrate is discussed above. Furthermore, the substrate comprises ceramic (column 2, lines 64-68).

In regards to claim 14, a method of detecting wear on a substrate is discussed above. Furthermore, the method also comprises determining the fluorescence intensity (column 3, lines 20-31).

In regards to claim 18, a method of detecting wear on a substrate is discussed above. Furthermore, the method also comprises coating a second composition on the coated surface prior to exposing said surface to wear (column 3, lines 8-15).

In regards to claim 20, a method of detecting wear on a substrate is discussed above. Furthermore, it is up to the user's discretion on how much of the substrate surface would be coated. For example, Hanneman discloses that the parts of the substrate that are covered are the ones that are exposed to high levels of differential erosion, such as the leading edges of a turbine bucket (column 1, lines 15-22).

In regards to claim 28, Hanneman discloses a method of determining the degree of wear on a coated surface of a substrate, the coating on the substrate comprising a fluorescent compound, the method

Art Unit: 2877

comprising exposing the coated substrate to radiation capable of exciting the fluorescent compound (column 3, lines 20-25), measuring the fluorescence intensity emitted from the coated surface (column 3, lines 25-31), and comparing the measured fluorescence intensity with a predetermined fluorescence intensity (column 3, lines 20-31).

Claims 1, 13, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Bumpus (USPN 5,023,019).

In regards to claim 1, Bumpus discloses a method of detecting wear (column 5, lines 32-34) on a substrate, the method comprising coating a composition comprising a fluorescent compound (column 3, lines 3-6), exposing the coated surface to wear (column 3, lines 11-15), exposing the surface to radiation capable of exciting the fluorescent compound (column 4, lines 41-52), and detecting the presence or absence of fluorescence (column 3, lines 55-64).

In regards to claim 13, a method of detecting wear on a substrate is discussed above. Furthermore, the substrate comprises fabric and woven web (column 3, lines 16-21).

In regards to claim 32, Bumpus discloses a method of detecting coverage of a coating (column 3, lines 55-59) on a substrate, the method comprising coating a composition comprising a fluorescent dye on a substrate essentially free of organosilicone (column 3, lines 3-6 and column 4, lines 34-40), affixing the composition to the substrate (column 4, lines 12-16), exposing the surface to radiation capable of exciting the fluorescent compound (column 4, lines 41-52), and detecting the presence or absence of fluorescence (column 3, lines 55-64).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

Art Unit: 2877

matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 9-12, 16-17, 19, 22-24 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chauvette et al. (USPN 6,391,226).

In regards to claims 1 and 28, Chauvette discloses a method for detecting wear on a substrate (column 3, lines 51-55) comprising coating a composition comprising a fluorescent compound (column 3, lines 40-42) on the surface of the substrate (column 3, lines 21-33), exposing the coated surface to wear, having a means to activate the fluorescent compound (column 4, lines 6-9), and detecting the presence or absence of fluorescence (column 4, lines 10-11). Although Chauvette does not directly disclose that a radiation is used to excite fluorescence in the coating, it is very well known to use a radiation source to cause an item to fluoresce, and it would be obvious to one of ordinary skill at the time the invention was made to use a radiation source, such as an exciting light, in order to cause the fluorescent sensor in the coating to fluoresce.

In regards to claim 4, a method of detecting wear on a substrate is discussed above. Furthermore, the fluorescent sensor coumarin (column 6, lines 36-39) is known to emit visible light.

In regards to claim 5, a method of detecting wear on a substrate is discussed above. Furthermore, coumarin emits light having a wavelength from 400-750 nm.

In regards to claim 6, a method of detecting wear on a substrate is discussed above. Furthermore, detecting comprises visually observing the absence or presence of fluorescence (column 2, lines 49-62).

In regards to claim 9, a method of detecting wear on a substrate is discussed above. Furthermore, the substrate can comprise vinyl or linoleum (column 5, lines 1-6).

In regards to claim 10, a method of detecting wear on a substrate is discussed above. Furthermore, the substrate comprises a floor (column 1, lines 9-10).

In regards to claim 11, it is well known for vinyl flooring to be placed in a dwelling, garage, hospital, store, restaurant, school, or office.

Art Unit: 2877

In regards to claim 12, a method of detecting wear on a substrate is discussed above.

Furthermore, although it is not disclosed that the substrate comprises an article such as a counter top, it is well known in the art that tile and stone can be used on a counter top, and counter tops also can be coated to avoid extensive wear on the surface. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the substrate comprise an article such as a counter top in order to determine the wear of the countertop by this method.

In regards to claim 16, a method of detecting wear on a substrate is discussed above.

Furthermore, the composition comprises a wax (column 5, lines 44-47).

In regards to claim 17, a method of detecting wear on a substrate is discussed above.

Furthermore, the coating composition comprises a floor finishing composition (column 2, lines 17-19).

In regards to claim 19, a method of detecting wear on a substrate is discussed above.

Furthermore, the method also comprises coating a first layer and a second layer on the coated substrate after coating the substrate with the coating containing the fluorescent compound (column 3, lines 43-51).

In regards to claim 22, a method of detecting wear on a substrate is discussed above.

Furthermore, although Chauvette does not disclose what type of wear the substrate is exposed to, it is obvious that a floor would be exposed to pedestrian traffic.

In regards to claim 23, a method of detecting wear on a substrate is discussed above.

Furthermore, if the tile and stone was used on a counter top, it would be obvious to one skilled in the art that wear would occur when exposing the counter top to repeated contact with other substrates, such as ceramic plates and marble cutting boards.

In regards to claim 24, a method of detecting wear on a substrate is discussed above.

Furthermore, the method also comprises exposing a first area of the coated surface to radiation capable of exciting the fluorescent compound, exposing a second area to radiation capable of exciting the fluorescent

Art Unit: 2877

compound (column 4, lines 38-46), comparing the intensity of the fluorescence of the first to the intensity of the second area (column 4, lines 46-47).

Claims 15, 25, 27, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanneman (USPN 4,327,155).

In regards to claims 15 and 27, a method of detecting wear on a substrate by determining the fluorescence intensity is discussed above. Furthermore, the difference of fluorescent intensity between a surface free of the fluorescent compound (which would indicate a completely worn coating), and the substrate with the fluorescent coating is determined to show the degree of wear of the substrate (column 3, lines 20-31), and to signal when the coating needs to be reapplied (column 2, lines 16-21).

In regards to claim 31, a method of detecting wear on a substrate by determining the fluorescence intensity and comparing it with a predetermined intensity is discussed above. Furthermore, the difference of fluorescent intensity between a surface free of the fluorescent compound (which would indicate a completely worn coating), and the substrate with the fluorescent coating is determined to show the degree of wear of the substrate (column 3, lines 20-31), and to signal when the coating needs to be reapplied (column 2, lines 16-21).

In regards to claims 25 and 30, a method of detecting wear on a substrate is discussed above. Furthermore, although Hanneman does not disclose directly that the intensity of the fluorescing coat is compared from the time of first coating to the intensity of the fluorescing coat after it has undergone wear, it would be obvious to one of ordinary skill in the art to compare this as a means to signal when additional coating should be added (column 2, lines 17-20).

Allowable Subject Matter

Claims 21 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2877

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 21, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for detecting wear on a substrate comprising coating a composition comprising a fluorescent compound on the surface of the substrate, exposing the surface to wear, exposing the surface to exciting radiation to cause the compound to fluoresce, and detecting the presence or absence of fluorescence, and further comprising coating a first portion of the substrate surface with the composition comprising the fluorescent compound and coating a second portion of the substrate with a second composition, the second composition being essentially free of the fluorescent compound.

As to claim 29, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for detecting wear on a substrate comprising coating a composition comprising a fluorescent compound on the surface of the substrate, exposing the surface to wear, exposing the surface to exciting radiation to cause the compound to fluoresce, and measuring the fluorescence intensity emitted from the coated surface, and comparing the measured fluorescence intensity with a predetermined fluorescence intensity, wherein the predetermined fluorescence intensity comprises a calibration curve.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional prior art is Feldstein (USPN 5,516,591).

Feldstein discloses a fluorescent indicating layer on a metallic substrate for indicating when a top coating has been worn through, exposing the indicating layer.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is 703 305 7182. The examiner can normally be reached on Monday through Thursday, 8am to 5pm and every other Friday 8am to 5pm.

Art Unit: 2877

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 703 308 4881. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9318 for regular communications and 703 872 9319 for After Final communications. For inquiries of a general nature, the Customer Service fax number is 703 872 9317.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1782.



F.L. Evans
Primary Examiner
Art Unit 2877

K.G.
KEG
January 24, 2003